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UI - 94003208
AU - Waldmann TA
AU - White JD
AU - Goldman CK
AU - Top L
AU - Grant A
AU - Bamford R
AU - Roessler E
AU - Horak ID
AU - Zaknoen S
AU - Kasten-Sportes C
AU - et al
TI - The interleukin-2 receptor: a target for monoclonal antibody treatment of human T-cell lymphotrophic virus I-induced adult T-cell leukemia.
LA - Eng
MH - Adult
MH - Antibodies, Monoclonal/*therapeutic use
MH - Antineoplastic Agents, Combined/therapeutic use
MH - Blotting, Southern
MH - Female
MH - Follow-Up Studies
MH - Gene Rearrangement, T-Lymphocyte
MH - Human
MH - HTLV-I/genetics
MH - Leukemia-Lymphoma, T-Cell, Acute, HTLV-I-Associated/drug therapy/genetics/*immunology/*therapy
MH - Male
MH - Middle Age
MH - Receptors, Interleukin-2/*immunology
MH - Restriction Mapping
MH - Virus Integration
RN - 0 (Antibodies, Monoclonal)
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AA - Author
EM - 199401
AB - Adult T-cell leukemia (ATL) is a malignancy of mature lymphocytes caused by the retrovirus human T-cell lymphotrophic virus-I (HTLV-I). It is an aggressive leukemia with an overall mortality rate of 50% within 5 months; no conventional chemotherapy regimen appears successful in inducing long-term disease-free survival in ATL patients. However, ATL cells constitutively express high-affinity interleukin-2 receptors (IL-2Rs) identified by the anti-Tac monoclonal antibody, whereas normal resting cells do not. To exploit this difference in receptor expression, we administered anti-Tac intravenously (IV) to 19 patients with ATL. In general the patients did not suffer untoward reactions, and in 18 of 19 cases did not have a reduction in normal formed elements of the blood. Seven patients developed remissions that were mixed (1 patient), partial (4 patients), or complete (2 patients),

with partial and complete remissions lasting from 9 weeks to more than 3 years as assessed by routine hematologic tests, immunofluorescence analysis, and molecular genetic analysis of T-cell receptor gene rearrangements and of HTLV-I proviral integration. Furthermore, remission was associated with a return to normal serum calcium levels and an improvement of liver function tests. Remission was also associated in some cases with an amelioration of the profound immunodeficiency state that characterizes ATL. Thus the use of a monoclonal antibody that blocks the interaction of IL-2 with its receptor expressed on ATL cells provides a rational approach for treatment of this aggressive malignancy.

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